

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the present application.

Listing of Claims:

1. (Currently Amended) Apparatus for ~~In~~ a radio communication system having a sending station that sends data ~~to a receiving station~~, the data formatted at an upper-level logical layer and into an upper-level data frame, and the upper-level data frame provided to a lower-level logical sublayer, the upper-level data frame further formatted thereat into at least one lower-level frame, the lower-level logical layer operable pursuant to an H-ARQ feedback scheme, said an improvement of apparatus for facilitating retransmission by the sending station of the upper-level data frame if the ~~receiving station fails adequately to receive the~~ at least one lower-level frame fails to be adequately received, said apparatus comprising:

an H-ARQ detector embodied at the lower-level logical sublayer, said H-ARQ detector for detecting H-ARQ indications returned ~~by the receiving station~~ to the sending station; and

an H-ARQ status response generator embodied at the lower-level logical sublayer of the sending station and adapted to receive indications of detections made by said H-ARQ detector, said H-ARQ status response generator for generating an H-ARQ status response message for delivery to the upper-level logical layer to notify the upper-level logical layer of the sending station when said H-ARQ detector detects an H-ARQ indication indicating that ~~the receiving station fails adequately to receive the~~ at least one lower-level frame fails to be adequately received, the upper-level logical layer selectably operable responsive to receipt of the H-ARQ status response ~~responsive to receipt of the H-ARQ status response message~~ to provide again the upper-level data frame to the lower-level logical sublayer.
2. (Currently Amended) The apparatus of claim 1 wherein ~~In~~ the radio communication system further comprises a receiving station to which the sending station

~~sends the data, said apparatus further comprising of claim 1, wherein the receiving station comprises a retransmission timer embodied at the receiving station, the retransmission timer for timing a first time period commencing with detecting reception at the receiving station of the at least one lower-level frame, wherein the sending station selectably initially sends the at least one lower-level frame in segmented portions at a second, reduced data rate, an improvement of apparatus for the receiving station for facilitating reception of the at least one lower level frame in the segmented portions, said apparatus comprising;~~ and a retransmission timer resetter adapted to receive indications of detection of reception of the segmented portions of retransmission of the lower-level frame at the second, reduced data rate, said retransmission timer resetter for causing resetting of the retransmission timer when the lower-level frame is retransmitted in the segmented portions.

3. (Original) The apparatus of claim 2 wherein said receiving station further comprises a resequencing buffer, said resequencing buffer for buffering the segmented portions of the lower-level frame when delivered to the receiving station.

4. (Original) The apparatus of claim 3 wherein the receiving station further comprises a resequencing buffer timer, said resequencing buffer timer for timing a second time period commencing with detection of reception of a segmented portion of the lower-level frame when retransmitted.

5. (Original) The apparatus of claim 4 wherein the second time period timed by said resequencing buffer timer is of a time substantially corresponding to the first time period timed by the retransmission timer.

6. (Original) The apparatus of claim 4 wherein each segment of the segmented portions has associated therewith a segment identifier and wherein the receiving station further comprises a missing-segment detector for identifying which, if any, segmented portions failed to have been delivered and buffered at the resequencing buffer when the resequencing buffer times out.

7. (Original) The apparatus of claim 6 wherein the receiving station further comprises a retransmission request generator adapted to receive indications of timing out of the resequencing buffer, said retransmission request generator for generating an NAK retransmission request responsive to timing out of the resequencing buffer and detection of at least one missing segment by said missing segment detector.

8. (Original) The apparatus of claim 7 wherein the NAK retransmission request comprises missing frame indications detectable by said retransmission timer.

9. (Original) The apparatus of claim 1 wherein the lower-level logical sublayer comprises a MAC (Medium Access Control) layer and wherein said H-ARQ detector and said H-ARQ status response layer are embodied at the MAC layer.

10. (Original) The apparatus of claim 1 wherein the upper-level logical layer comprises an RLP (Radio Link Protocol) layer and wherein the H-ARQ status response message is delivered by said H-ARQ status response generator to the RLP layer.

11. (Currently Amended) The apparatus of claim 1 wherein the H-ARQ status response message is further generated to indicate ~~that the receiving station successfully received~~ successful reception of the at least one lower-level frame.

12. (Currently Amended) The apparatus of claim 1 wherein the H-ARQ status response message further identifies with which upper-level data frame that the H-ARQ indications received by said H-ARQ detector are associated.

13. (Original) The apparatus of claim 12 wherein the upper-level data frame formed by the upper-level logical layer comprises a frame sequence number and wherein the H-ARQ status response message includes an indication of the frame sequence number.

14. (Original) The apparatus of claim 13 wherein the upper level data frame comprises an RLP (Radio Link Protocol) frame and wherein the frame sequence number comprises an RLP sequence number.

15. (Currently Amended) A ~~In a~~ method of communicating in a radio communication system having a sending station that sends data to a receiving station, the data formatted at an upper-level logical layer and into an upper-level data frame, and the upper-level data frame provided to a lower-level logical sublayer, the upper-level data frame further formatted thereat into at least one lower-level frame, the lower-level logical layer operable pursuant to an H-ARQ feedback scheme, ~~an improvement of a said~~ method for facilitating retransmission by the sending station of the upper-level data frame if the receiving station fails adequately to receive the at least one lower-level frame, said method comprising:

detecting, at the lower-level logical sublayer, H-ARQ indications returned by the receiving station to the sending station;

generating an H-ARQ status response message for delivery to the upper-level logical layer to notify the upper-level logical layer of detection during said operation of detecting

an H-ARQ indication indicating that the receiving station fails adequately to receive the at least one lower-level frame; and

delivering the H-ARQ status response message to the upper-level logical layer.

16. (Original) The method of claim 15 further comprising the operation, responsive to delivery of the H-ARQ status response message during said operation of delivering, of providing again the upper-level data frame to the lower-level logical sublayer.

17. (Currently Amended) ~~A~~ In a method of communicating in a radio communication system having a sending station that sends data to a receiving station, the data formatted at an upper-level logical layer and into an upper-level data frame, and the upper-level data frame provided to a lower-level logical sublayer, the upper-level data frame further formatted thereat into one lower-level frame, the lower-level logical layer operable pursuant to an H-ARQ feedback scheme, the receiving station comprising ~~comprises~~ a first retransmission timer, the first retransmission timer for timing a first time period commencing when a missing upper-level frame is detected at the receiving station, wherein the sending station selectably initially sends at least one upper-level frame at a first data rate and retransmits, if necessary, segmented portions of the at least one upper-level frame at a second, reduced data rate, said an improvement of a method ~~said an improvement of a method~~ for facilitating reception of the segmented portions of the at least one upper-level frame, said method comprising:

detecting reception at the receiving station of retransmission of the upper-level data frame at the second, reduced data rate; and

resetting the first retransmission timer when the at least one upper-level frame is retransmitted in the segmented portions;

Appl. No. 10/612,477
Amdt. dated 2 August 2005
Reply to Office Action of 3 May 2005

buffering the segmented portions of the at least one upper-level frame when delivered to the receiving station; and

timing a separate time period commencing for each segmented portion of the at least one upper-level frame when the segmented portion is detected missing during the retransmission.

18. Canceled.